

Appl. No. : 09/892,900
Filed : June 26, 2001

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1-13. (Canceled)

14. (Currently Amended) An infusion pump comprising:

a first shell defining a non-planar interior surface;

a second shell removably secured to said first shell;

a platen defining a non-planar surface complementary to said interior surface of said first shell, said platen being positioned between said first and second shells such that said non-planar surface of said platen faces said interior surface of said first shell and defines a variable-volume space therebetween, said space being configured to hold a fluid delivery bag therein;

a spring arranged to bias said platen in a first direction to decrease the volume of said space;

wherein said spring, said platen and said interior surface are configured to compress said fluid delivery bag to expel fluid therefrom when said platen is moving in said first direction and wherein a total distance of movement of said platen in said first direction is less than a dimension of said space in a direction perpendicular to said first direction such that a working length of said spring is less than a free length of said spring.

15. (Previously Presented) The infusion pump of Claim 14, wherein said spring is attached to at least one of said second shell and said platen.

16. (Previously Presented) The infusion pump of Claim 14, wherein said first shell is threadably engaged with said second shell.

17. (Previously Presented) The infusion pump of Claim 14, wherein said first and second shells are generally circular in outer shape.

18. (Withdrawn) The infusion pump of Claim 14, wherein said first and second shells are generally rectangular in outer shape.

19. (Currently Amended) An infusion pump comprising:

a first shell defining a non-planar interior surface;

a second shell removably secured to said first shell;

a platen defining a non-planar surface complementary to said interior surface of said first shell, said platen being positioned between said first and second shells such that

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said non-planar surface of said platen faces said interior surface of said first shell and defines a variable-volume space therebetween, said space being configured to hold a fluid delivery bag therein;

at least one spring arranged to bias said platen in a first direction to decrease the volume of said space;

wherein said at least one spring, said platen and said interior surface are configured to compress said fluid delivery bag to expel fluid therefrom when said platen is moving in said first direction and wherein a total distance of movement of said platen in said first direction is less than a dimension of said space in a direction perpendicular to said first direction such that a working length of said at least one spring is less than a free length of said at least one spring.

20. (Withdrawn) The infusion pump of Claim 19, wherein said at least one spring comprises a first spring and a second spring, said infusion pump additionally comprising a parallelogram linkage assembly positioned between said platen and said second shell, said first and second springs configured to exert a spring force on said parallelogram linkage assembly, said parallelogram linkage assembly being configured to bias said platen in said first direction in response to said spring force.

21. (Withdrawn) The infusion pump of Claim 20, wherein said parallelogram linkage assembly comprises a first arm and a second arm rotatably attached to said platen, said parallelogram linkage assembly additionally comprising a third arm and a fourth arm rotatably attached to said second shell, wherein a component of said spring force of said first spring acts on said first and third arms and a component of said spring force of said second spring acts on said second and fourth arms.

22. (Withdrawn) The infusion pump of Claim 21, wherein said parallelogram linkage assembly additionally comprises a shaft having first and second ends, a first slide and a second slide slidably positioned on said shaft, said first spring positioned between said first end and said first slide, said component of said spring force of said first spring acting on said first and third arms through said first slide and said second spring positioned between said second end and said second slide, said component of said spring force of said second spring acting on said second and fourth arms through said second slide.

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23. (Currently Amended) A kit for assembling an infusion pump, comprising:
a first shell defining a non-planar interior surface;
a second shell configured to be removably secured to said first shell;
a platen defining a non-planar surface complementary to said interior surface of said first shell, said platen being sized and shaped to be capable of being positioned between said first and second shells that said non-planar surface of said platen faces said interior surface of said first shell to define a variable-volume space therebetween when so positioned, said space being configured to hold a fluid delivery bag therein; and
at least one spring sized and shaped to be positioned between said second shell and said platen to bias said platen in an infusion direction tending to decrease the volume of said space and wherein a total distance of movement of said platen in said infusion direction is less than a dimension of said space in a direction perpendicular to said infusion direction such that a working length of said at least one spring is less than a free length of said at least one spring.

24. (Previously Presented) The kit of Claim 23, additionally comprising a fluid delivery bag connected to an outlet tube, said fluid delivery bag being sized and shaped to be positioned within said variable-volume space, said at least one spring, said platen and said interior surface configured to compress said fluid delivery bag to expel fluid therefrom through said outlet tube when said platen is moving in said infusion direction.

25. (Withdrawn) The kit of Claim 23, wherein said at least one spring comprises a first spring and a second spring, said infusion pump additionally comprising a parallelogram linkage assembly positioned between said platen and said second shell, said first and second springs configured to exert a spring force on said parallelogram linkage assembly, said parallelogram linkage assembly being configured to bias said platen in said infusion direction in response to said spring force.

26. (Withdrawn) The infusion pump of Claim 25, wherein said parallelogram linkage assembly comprises a first arm and a second arm rotatably attached to said platen, said parallelogram linkage assembly additionally comprising a third arm and a fourth arm rotatably attached to said second shell, wherein a component of said spring force of said first spring acts on said first and third arms and a component of said spring force of said second spring acts on said second and fourth arms.

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27. (Withdrawn) The infusion pump of Claim 26, wherein said parallelogram linkage assembly additionally comprises a shaft having first and second ends, a first slide and a second slide slidably positioned on said shaft, said first spring positioned between said first end and said first slide, said component of said spring force of said first spring acting on said first and third arms through said first slide and said second spring positioned between said second end and said second slide, said component of said spring force of said second spring acting on said second and fourth arms through said second slide.

28. (New) The infusion pump of Claim 14, wherein said total movement of said platen is about one-fourth of a minimum dimension in said direction perpendicular to said first direction.

29. (New) The infusion pump of Claim 14, wherein said working length of said spring is about one-fourth of a free length of said spring.

30. (New) The infusion pump of Claim 14, wherein each of said platen and said interior surface include a substantially planar central portion and a non-planar annular portion surrounding said central portion.

31. (New) The infusion pump of Claim 19, wherein said total movement of said platen is about one-fourth of a minimum dimension in said direction perpendicular to said first direction.

32. (New) The infusion pump of Claim 19, wherein said working length of said at least one spring is about one-fourth of a free length of said at least one spring.

33. (New) The infusion pump of Claim 19, wherein each of said platen and said interior surface include a substantially planar central portion and a non-planar annular portion surrounding said central portion.

34. (New) The kit of Claim 23, wherein said total movement of said platen is about one-fourth of a minimum dimension in said direction perpendicular to said infusion direction.

35. (New) The kit of Claim 23, wherein said working length of said at least one spring is about one-fourth of a free length of said at least one spring.

36. (New) The kit of Claim 23, wherein each of said platen and said interior surface include a substantially planar central portion and a non-planar annular portion surrounding said central portion.